

## CLAIMS

1. A porous-material-forming photo-curing resin composition comprising:

- 5        a photo-polymerizable monomer (A) having a surface tension of not more than  $25 \times 10^{-5}$  N/cm,  
         an organic compound (B) that is non-compatible with the photo-polymerizable monomer (A),  
         a common solvent (C) that is compatible with the  
10       photo-polymerizable monomer (A) and the organic compound (B); and  
         a photo-polymerization initiator (D).

2. The porous-material-forming photo-curing resin composition according to claim 1, wherein the photo-  
15       polymerizable monomer (A) is a photo-polymerizable monomer containing a fluorine atom or a silicon atom.

3. The porous-material-forming photo-curing resin composition according to claim 1 or 2, wherein: the photo-polymerizable monomer (A) and other photo-polymerizable  
20       monomers are used in combination and the blending amount of the other photo-polymerizable monomers is not more than 90% by weight of the entire amount of the photo-polymerizable monomers.

4. The porous-material-forming photo-curing resin  
25       composition according to any one of claims 1 to 3, wherein

the organic compound (B) is an organic compound having a surface tension of not less than  $40 \times 10^{-5}$  N/cm.

5        5. The porous-material-forming photo-curing resin composition according to any one of claims 1 to 4, wherein the component that is non-compatible with the photo-polymerizable monomer (A) is water.

10       6. The porous-material-forming photo-curing resin composition according to any one of claims 1 to 5, wherein the common solvent (C) is an organic solvent having a surface tension in a range from 25 to  $35 \times 10^{-5}$  N/cm.

       7. The porous-material-forming photo-curing resin composition according to any one of claims 1 to 6, wherein the photo-polymerizable monomer (A) has a (metha)acryloyl group or a vinyl group as a photo-polymerizable group.

15       8. The porous-material-forming photo-curing resin composition according to any one of claims 1 to 7, wherein the organic compound (B) comprises one or more kinds of groups and/or bonds selected from the group consisting of a hydroxide group, an amino group, a ketone bond, a sulfide bond, a sulfoxide bond and a cyclic amide bond.

20

       9. The porous-material-forming photo-curing resin composition according to any one of claims 1 to 8, wherein the common solvent (C) is an aromatic or alicyclic hydrocarbon solvent, an oxygen-containing solvent or a nitrogen-containing solvent.

25

10. A porous resin cured product which is obtained by photo-curing the porous-material-forming photo-curing resin composition according to any one of claims 1 to 9.

5 11. The porous resin cured product according to claim 10, which is obtained by removing the organic compound (B) or water and the common solvent (C) contained therein.

12. The porous resin cured product according to claim 10 or 11, which has a film shape or a sheet shape.

10 13. The porous resin cured product according to any one of claims 10 to 12, which has a substrate on at least one face.

14. A liquid crystal display element comprising the porous resin cured product according to any one of claims 10 to 13 as a supporting material.

15 15. A liquid crystal recording material comprising the porous resin cured product according to any one of claims 10 to 13 as a supporting material.